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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,289	02/06/2001	Robert Angelo Mercuri	P-1017	4708

7590 05/20/2003
James R Cartiglia
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Nashville, TN 37203

EXAMINER

BAHTA, ABRAHAM

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 05/20/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-13

Office Action Summary

Application No.

09/705,289

Applicant(s)

MERCURI ET AL.

Examiner

Abraham Bahta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 and 16-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 6-10 and 16-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other: _____

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Claim Rejections - 35 USC § 112

Claims 6 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 16 indicate the requirements for the graphite flake to be "sized no more than about 30% by weight +80 mesh". This is not clear. The Examiner has taken the position that 30% by weight of the graphite flake does not pass through an 80 mesh screen. Clarification and correction is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercuri (USP 6,017,633) in view of Mercuri (USP 6,087,034).

Mercuri '633 teaches a flexible graphite sheet made by treating graphite flakes with intercalating solution. See col. 1, line 63 - col. 2, line 14. The intercalated flakes may be exfoliated which involves heating the flakes to an elevated temperature. The exfoliated graphite may then be compressed into flexible graphite sheet. See col. 2, lines 56-58. Mercuri in different embodiments teaches the first batch graphite flakes may be at least 80% by weight sized 20x50

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mesh and a second batch of smaller sized natural graphite flakes sized at least 80% by weight 50 by 80 mesh. In addition, the first batch and second batch may be mixed together to provide from about 5% to 25% by weight of unexfoliated intercalated natural graphite flakes in the mixture. The reference suggests the flexible graphite sheet may be roll-pressed (col. 3, lines 31-39) and may be used as a sealing gasket. See col. 2, lines 69-65.

Mercuri '633 does not require flakes sized no more than about 30% by weight +80 mesh; however, the reference at col. 3, lines 40-49 suggests the use of finer than 80 mesh sized unexfoliated intercalated natural graphite flakes. The reference suggests that although this results in a concentration of such particles near the surface of the bed of large exfoliated graphite particles and also results in a flake with excess retained water content which results in a sheet which loses expansion capability, the fact remains the use of the claimed size of flake is known, and there are no requirements in the claim for any particular water content, expansion capability or shelf life. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust or vary the size of the mesh, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claims 8, Mercuri '633 at col. 4 Example III teaches the treated, intercalated natural graphite flake may be water washed and dried to about 1% weight water before expansion.

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Regarding claims 9-10, Mercuri 034 teaches channels may be provided in a flexible graphite sheet. See col. 3, lines 34-49. It would have been obvious to the skilled artisan to provide channels to the graphite sheet of Mercuri '633 as suggested by Mercuri '034 in order to provide additional additives to the graphite sheet.

Claim Rejections - 35 USC § 103

Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercuri '633 in view of Mercuri '034.

Mercuri '633 teaches a sealing gasket (col. 5, Example 5) which is made from a flexible graphite sheet which may be roll-pressed (col. 3, lines 31-39) and made by treating graphite flakes with intercalating solution. See col. 1, line 63 - col. 2, line 14. The intercalated flakes may be exfoliated which involves heating the flakes to an elevated temperature. The exfoliated graphite may then be compressed into flexible graphite sheet. See col. 2, lines 56-58. Mercuri in different embodiments teaches the first batch graphite flakes may be at least 80% by weight sized 20x50 mesh and a second batch of smaller sized natural graphite flakes sized at least 80% by weight 50 by 80 mesh. In addition, the first batch and second batch may be mixed together to provide from about 5% to 25% by weight of unexfoliated intercalated natural graphite flakes in the mixture.

Mercuri '633 does not require flakes sized no more than about 30% by weight +80 mesh; however, the reference at col. 3, lines 40-49 suggests the use of finer than 80 mesh sized unexfoliated intercalated natural graphite flakes. The reference suggests that although this results

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in a concentration of such particles near the surface of the bed of large exfoliated graphite particles and also results in a flake with excess retained water content which results in a sheet which loses expansion capability the fact remains the use of the claimed size of flake is known, and there are no requirements in the claim for any particular water content, expansion capability or shelf life. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust or vary the size of the mesh, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claims 18, Mercuri '633 at col. 4 Example III teaches the treated, intercalated natural graphite flake may be water washed and dried to about 1% weight water before expansion.

Regarding claims 19 and 20, Mercuri '034 teaches channels may be provided in a flexible graphite sheet. See col. 3, lines 34-49. It would have been obvious to the skilled artisan to provide channels to the graphite sheet of Mercuri '633 as suggested by Mercuri '034 in order to provide additional additives to the graphite sheet.

Claim Rejections - 35 USC § 103

Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mercuri '633 in view of Mercuri '034.

Mercuri teaches a flexible graphite sheet which may be roll-pressed (col. 3, lines 31-39) and made by treating graphite flakes with intercalating solution. See col. 1, line 63 - col. 2, line

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14. The intercalated flakes may be exfoliated which involves heating the flakes to an elevated temperature. The exfoliated graphite may then be compressed into flexible graphite sheet. See col. 2, lines 56-58. Mercuri in different embodiments teaches the first batch graphite flakes may be at least 80% by weight sized 20x50 mesh and a second batch of smaller sized natural graphite flakes sized at least 80% by weight 50 by 80 mesh. In addition, the first batch and second batch may be mixed together to provide from about 5% to 25% by weight of unexfoliated intercalated natural graphite flakes in the mixture.

Mercuri '633 does not require flakes sized an 80 mesh screen; however, the reference at col. 3, lines 40-49 suggests the use of finer than 80 mesh sized unexfoliated intercalated natural graphite flakes. The reference suggests that although this results in a concentration of such particles near the surface of the bed of large exfoliated graphite particles and also results in a flake with excess retained water content which results in a sheet which loses expansion capability the fact remains the use of the claimed size of flake is known, and there are no requirements in the claim for any particular water content, expansion capability or shelf life. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust or vary the size of the mesh, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

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Regarding claims 23, Mercuri '633 at col. 4 Example III teaches the treated, intercalated natural graphite flake may be water washed and dried to about 1% weight water before expansion.

Regarding claims 24-25, Mercuri '034 teaches channels may be provided in a flexible graphite sheet. See col. 3, lines 34-49. It would have been obvious to the skilled artisan to provide channels to the graphite sheet of Mercuri '633 as suggested by Mercuri '034 in order to provide additional additives to the graphite sheet.

Response to Applicant's arguments

With respect to Mercuri '663 the applicant states that in the reference, the first batch of flake is described as at least 80% 20 x 50 mesh (through 20 mesh on 50 mesh) and that the second batch is described as at least 80% 50 x 80 mesh and this batch is disclosed to be 5 to 25% by weight of the mixture. The Examiner disagrees. The second batch is not described to be 5 to 25% by weight of the mixture. The Examiner contends that the unexfoliated intercalated natural graphite flakes, at least 80% by weight 50 by 80 mesh, are mixed and blended with the exfoliated particles of the first batch to provide from about 5% to 25% by weight of unexfoliated intercalated natural graphite flake in the mixture. Therefore, Examiner's understanding that the 5% to 25% by weight is the final combination of the flakes of the first batch and the second batch. See Mercuri '633 col. 3, lines 1-39.

As for the claimed invention, the applicant argues that the reference does not teach, suggest, or disclose each and every element of the claimed invention such that no more than 30%

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of the graphite flake will not pass through an 80 mesh screen. The applicant states that no more than 30% of the graphite flake will not pass through an 80 mesh screen and interprets this as at least 70% of the graphite flake will pass through the 80 mesh screen. The Examiner contends that the fact that no more than 30% of the graphite flake will not pass through an 80 mesh screen contradicts with the applicant's interpretation that at least 70% of the graphite flake will pass through the 80 mesh screen. It is the Examiner's understanding that if at least 70% of the graphite flake passes through the 80 mesh screen this implies that 30% or more of the flake will pass through the 80 mesh screen. The applicant admits that the reference suggests that finer flake than 80 mesh may be used, however, argues nothing in the reference suggests that the percentage of such finer flake should be over the disclosed 25%. The Examiner contends that Mercuri's flexible graphite sheet comprises at least 80% by weight 50 by 80 mesh. Further, the reference suggests finer flake than 80 mesh may be used depending on the amount of water content retained in the flakes desired. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust or vary the size of the mesh, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. Further, the applicant contends that the limitation of claims 6 and 16 is directed in making a graphite article more conductive in the thickness direction by unaligning the particles which make-up the graphite articles; however, the Examiner notes these limitation ^{have} not been claimed in claims 6 or 16.

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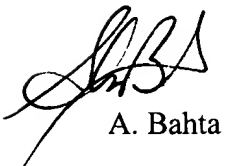
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Abraham Bahta at telephone number (703) 308-4412. The Examiner can normally be reached Monday-Friday from 11:30 AM -8:00 PM (EST).

If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor Deborah, Jones, can be reached on (703) 308-3822.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.



A. Bahta

11/07/02



DEBORAH JONES
SUPERVISORY PATENT EXAMINER